WHAT IS CLAIMED IS:

1. A radio base station for transferring signals of time division multiplexed frames with respect to a plurality of radio terminals, the radio base station comprising:

a beam formation unit configured to form a plurality of space dividing beams simultaneously;

a plurality of antenna elements configured to transfer the signals with respect to the radio terminals by transmitting the plurality of space dividing beams toward the radio terminals; and

a scheduling processing unit configured to allocate communication bandwidths to the radio terminals such that there is substantially no mutual interference among those signals to be transferred by different frames, with respect to a plurality of frames that are corresponding to at least one of the plurality of space dividing beams.

2. The radio base station of claim 1, wherein the scheduling processing unit allocates an entire frame configuration information indicating frame configurations of all the time division multiplexed frames to one of the time division multiplexed frames, and allocates communication bandwidths of an identical time in different frames to different radio terminals such that there is substantially no mutual interference among those signals to be transferred at the identical time with respect to the different radio terminals.

3. The radio base station of claim 2, wherein the scheduling processing unit schedules such that the entire frame configuration information is notified to all the radio terminals simultaneously.

4. The radio base station of claim 1, wherein the

scheduling processing unit allocates a plurality of frame configuration information each indicating a frame configuration of a respective time division multiplexed frame, to corresponding ones of the time division multiplexed frames respectively, and allocates communication bandwidths in different frames to different radio terminals such that there is substantially no mutual interference among those signals to be transferred with respect to the different radio terminals.

5. The radio base station of claim 4, wherein the scheduling processing unit schedules such that the plurality of frame configuration information are notified to all the radio terminals simultaneously.

6. The radio base station of claim 1, further comprising:

a memory unit configured to store weights respectively corresponding to the radio terminals, that are to be used in forming the plurality of space dividing beams; and

a weight control unit configured to set the weights to the beam formation unit.

7. The radio base station of claim 6, wherein the scheduling processing unit allocates the communication bandwidths to the radio terminals such that there is substantially no mutual interference among those signals to be transferred with respect to the different radio terminals according to the weights corresponding to the different radio terminals as stored in the memory unit.

8. The radio base station of claim 6, wherein the scheduling processing unit handles a group of radio terminals with similar weights as an identical radio terminal.

9. The radio base station of claim 6, wherein the beam formation unit has a multi-beam formation circuit configured to form the plurality of space dividing beams simultaneously by weighting the signals to be transmitted or received by the antenna elements using the weights set by the weight control unit.

10. A frame configuration method for time division multiplexed frames to transfer signals between a radio base station and a plurality of radio terminals, the frame configuration method comprising:

(a) allocating an entire frame configuration information indicating frame configurations of all the time division multiplexed frames to one of the time division multiplexed frames; and

(b) allocating communication bandwidths of an identical time in different frames to different radio terminals such that there is substantially no mutual interference among those signals to be transferred at the identical time with respect to the different radio terminals.

11. The frame configuration method of claim 10, wherein the step (a) allocates the entire frame configuration information to a frame to which a control information to be transmitted to all the radio terminals simultaneously is allocated.

12. The frame configuration method of claim 11, wherein when there is a difference between total sums of the communication bandwidths allocated to the time division multiplexed frames, the step (b) allocates a next communication bandwidth to a frame for which a total sum of allocated communication bandwidths is smaller.

13. The frame configuration method of claim 12, wherein

the step (b) determines the next communication bandwidth to be allocated such that a total sum of allocated communication bandwidths for a reference frame selected in advance among the time division multiplexed frames is not exceeded by a total sum of allocated communication bandwidths for any other time division multiplexed frames.

14. The frame configuration method of claim 12, wherein the step (b) compares the difference between the total sums of the communication bandwidths with a prescribed threshold.

15. The frame configuration method of claim 12, wherein when the difference between the total sums of the communication bandwidths is small, the step (b) regards the total sums of the communication bandwidths as identical.

16. The frame configuration method of claim 10, wherein the step (b) allocates the communication bandwidths of the identical time in the different frames to the different radio terminals such that there is substantially no mutual interference among those signals to be transferred at the identical time with respect to the different radio terminals, according to weights respectively corresponding to the radio terminals, that are to be used in forming a plurality of space dividing beams for transferring the signals between the radio base station and the radio terminals.

17. A frame configuration method for time division multiplexed frames to transfer signals between a radio base station and a plurality of radio terminals, the frame configuration method comprising:

(a) allocating a plurality of frame configuration information each indicating a frame configuration of a

respective time division multiplexed frame, to corresponding ones of the time division multiplexed frames respectively; and

(b) allocating communication bandwidths in different frames to different radio terminals such that there is substantially no mutual interference among those signals to be transferred with respect to the different radio terminals.

18. The frame configuration method of claim 17, wherein the step (b) allocates a next communication bandwidth to a frame for which a total sum of allocated communication bandwidths is smallest among the time division multiplexed frames.

19. The frame configuration method of claim 17, wherein the step (b) allocates the communication bandwidths in the different frames to the different radio terminals such that there is substantially no mutual interference among those signals to be transferred with respect to the different radio terminals, according to weights respectively corresponding to the radio terminals, that are to be used in forming a plurality of space dividing beams for transferring the signals between the radio base station and the radio terminals.

20. A computer usable medium having computer readable program codes embodied therein for causing a computer to function as a scheduling processing unit in a radio base station for transferring signals of time division multiplexed frames with respect to a plurality of radio terminals, the computer readable program codes include:

a first computer readable program code for causing said computer to allocate an entire frame configuration information indicating frame configurations of all the time

division multiplexed frames to one of the time division multiplexed frames, or allocate a plurality of frame configuration information each indicating a frame configuration of a respective time division multiplexed frame, to corresponding ones of the time division multiplexed frames respectively; and

a second computer readable program code for causing said computer to allocate communication bandwidths of an identical time in different frames to different radio terminals such that there is substantially no mutual interference among those signals to be transferred at the identical time with respect to the different radio terminals, or allocate communication bandwidths in different frames to different radio terminals such that there is substantially no mutual interference among those signals to be transferred with respect to the different radio terminals.